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Book Reviews

H. LÜNEBERG, *Translation Planes*, Springer-Verlag, New York, 1980, 278 pp. In dimensions other than two, an affine space can be represented as a vector space over a division ring. In dimension two, this is not the case. Indeed, there are so many affine planes that one may quite fairly accuse nature of being profligate. Among affine planes are the translation planes. These are affine planes for which the group of translations is transitive on the points. Alternately, they can be described as spreads in abelian groups. The connections with algebra go much deeper—various examples of translation planes are related to Dickson nearfields, rank three collineation groups of affine planes, Suzuki groups and other algebraic objects. Thus, the theory of translation planes forms an important (if specialized) area of geometric algebra.

The book under review is a thorough (but not exhaustive) introduction to the theory of finite translation planes which has developed largely in the past thirty years or so. It is carefully written in a severe *Satz–Beweis* style, a style which is not altogether inappropriate for a subject whose central concern is the "mastering of the examples." The casual reader will have to supply his own motivation and momentum. The true connoisseur of mathematical miniatures, however, will find much to savor in this book.

R. SMULLYAN, *What Is the Name of This Book?—The Riddle of Dracula and Other Logical Puzzles*, Prentice–Hall, Englewood Cliffs, N.J., 1978, 241 pp. This is a book about informal formal logic—that is, to overdo a felicitous metaphor of Gilbert Ryle, logic in black tie and tails, but at the end of the dinner party, after a few drinks too many, and prancing around like Groucho Marx. It is also a very erudite book. The final chapter, for example, is an account of Gödel's Incompleteness Theorem presented accurately, simply, and humorously, without any misplaced reverence for formal notation or irrelevant philosophical posturing which mars many a popular account.

This collection of puzzles is undoubtedly the most important collection of mathematical puzzles since the collections of Lewis Carroll. Although the present collection borrows several characters from Carroll, its aims are more mathematical than whimsical: one is almost tempted to say that it is a more serious work. There is nothing here that compares with the just-so surrealism of the Reverend Dodgson's imagination. Personally, I was reminded of the fragments of the *Ming Chia*, a school of ancient Chinese philosophers. Like the author, they were immersed in Taoism and formal logic, and were fond of presenting their deepest insights in the form of light-hearted puzzles and paradoxes.

The casual reader, as well as the dedicated puzzle-solver, should find much pleasure in this collection.

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